

Appl. No. : 09/988,728  
Filed : November 16, 2001

### AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of conducting an assay, the method comprising:

providing a sample of cells in a chamber in a disc, the chamber including at least one capture zone with a capture agent, the disc including at least one inlet port and a vent port on a first surface of the disc;

loading the disc into an optical reader which includes a detector and a trigger sensor;

rotating the disc so as to capture separate different cell types into different capture zones;

directing an incident beam of electromagnetic radiation to the at least one capture zone;

detecting by use of the detector at least one beam of electromagnetic radiation formed after interacting with the disc at the at least one capture zone at the capture zone;

detecting trigger information by use of the trigger sensor from a disc location that is separate from the at least one capture zone;

generating a trigger signal in response to the detected trigger information;

converting generating an output signal indicative of at least a portion of the detected at least one beam into an output signal relating to captured cells;

processing at least a portion of the output signal in response to the trigger signal;  
and

analyzing the at least a portion of the output signal to extract therefrom information relating to the number of cells captured at the at least one capture zone;

generating a counting of captured the number of cells in each of the at least one capture zones; and

providing an output including the counts, wherein the output includes counts for CD4 cells and CD8 cells.

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2. (Previously Presented) The method according to claim 1, wherein the chamber is internal to the disc and is bounded on opposite sides by a substrate and cap.

3. (Original) The method according to claim 1, wherein the optical disc is constructed with a reflective layer such that light directed to the capture zone and not striking a cell is reflected.

4. (Previously Presented) The method according to claim 1, wherein the optical disc is constructed such that light directed to the capture zone and not striking a cell is transmitted through the optical disc, the disc being between the light source and a detector.

5. (Previously Presented) The method according to any one of claims 1-5, wherein the disc surface is coated with a first group of cell capture agents.

6. (Previously Presented) The method according to claim 5, wherein the cell capture agents define a capture zone.

7. (Currently Amended) The method according to claim 6, wherein a second group of cell capture agents define a second capture zone.

8. (Original) The method according to claim 7, wherein the first and second captures zones are in one chamber.

9. (Original) The method according to claim 5, wherein the cell capture agents are for binding with cell surface antigen.

10. (Original) The method according to claim 9, wherein the cell surface antigen is selected from the CD family of antigens.

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11. (Original) The method according to claim 10, wherein the cell surface antigen is selected from the group consisting of CD3, CD4, CD8, and CD45.

12. (Original) The method according to claim 1, further including:  
directing the sample of cells into proximity with the cell capture agents;  
incubating the cells in the presence of the capture agents; and  
allowing the cells to specifically bind to the capture agents.

13. (Original) The method according to claim 12, further including analyzing the number of cells captured to thereby determine a cell concentration in the sample.

14. (Previously Presented) The method of claim 13, wherein the analyzing includes detecting sufficiently large changes in a level of light reflected from or transmitted through the disc.

15. (Original) The method of claim 13, wherein the analyzing includes using image recognition to count captured cells.

16. (Previously Presented) The method of claim 15, wherein the image recognition distinguishes one type of white blood cell from another.

17. (Original) The method of claim 1, wherein the chamber has a plurality of capture zones, each having a different cell capture agent.

18. (Currently Amended) The method of claim 17, wherein the rotating includes rotating for a sufficient period of time at a sufficient speed so that the cells have an opportunity to bind with the capture moleculesagents.

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19. (Original) The method of claim 18, wherein the rotating includes rotating for a sufficient period of time at a sufficient speed so that unbound cells are moved away from the capture zones.

20. (Original) The method of claim 19, wherein the rotating is done at a single speed.

21. (Original) The method of claim 17, further comprising counting the captured cells in each of the capture zones and providing an output including the counts.

22. (Previously Presented) The method of claim 21, wherein the output includes a ratio of CD4 to CD8 cells.

23-29. Cancelled.

30. (Previously Presented) The method of claim 12, wherein the analyzing includes detecting sufficiently large changes in the level of light reflected from or transmitted through the disc.

31. (Previously Presented) The method of claim 12, wherein the analyzing includes using image recognition to count captured cells.

32. (Currently Amended) The method of Claim 1, wherein the disc comprises a first layer of streptavidin, streptavidin, a second layer over the first layer, the second layer comprising a first antibody raised in a first species against a type of immunoglobulin of a second species, and a third layer over the second layer, the third layer comprising a second antibody raised in the second species against a cell surface antigen.

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33. (New) The method of Claim 1, wherein each of the capture zones are sequentially located in a fluid path between the inlet port and the vent port, and wherein capture zones are sequentially provided for CD4, CD8 and a control in relation to the fluid path.

34. (New) The method of Claim 1, wherein the at least one beam comprises a first beam for detecting the trigger information and a second beam for interacting with the disc at the at least one capture zone.

35. (New) The method of Claim 34, wherein the trigger sensor comprises a detector which is responsive to the first beam for detecting the trigger information.

36. (New) The method of Claim 1, wherein the trigger information comprises a trigger mark in the disc.

37. (New) The method of Claim 36, wherein the trigger mark is a window in the disc.

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## **SUMMARY OF INTERVIEW**

### Exhibits and/or Demonstrations

None

### Identification of Claims Discussed

Claim 1

### Identification of Prior Art Discussed

Sheppard, Jr. et al. (US Patent No. 6,143,247)

### Proposed Amendments

Amendments proposed in the interview correspond with those presented in the amendment herein except as noted in the section entitled "REMARKS".

### Principal Arguments and Other Matters

Applicants argued that Sheppard, Jr. et al does not teach a "trigger signal" as presented in the proposed claims. Applicant also suggested that the limitations of Claim 34 as proposed therein, and as presented in this amendment, define patentable subject matter over the prior art of record.

### Results of Interview

The Examiner has agreed to consider the limitations of Claim 34 with respect to Claim 1, which appears to overcome Sheppard, Jr. et al. pending further searches.